

A METHOD OF MEASURING A PART WITH A WIDE RANGE OF SURFACE REFLECTIVITIES

Abstract of Disclosure

A method for optical part shape measurement of a bare metal part to determine acceptability of the manufactured part. A variable level light source illuminates the part which is mounted on positioning equipment that allows the part to be moved from one position to another. Localized variations in light level are first determined and are compared with a reflectivity model of the part to determine optimization of the setup. Light level and viewing orientation of the part are adjusted to optimize the quality of test data obtained. Data quality is reviewed to ascertain a confidence factor for each location on the part's surface. Using both the reflectivity model and quality test results, data acquired for specified areas of the part is either accepted or rejected. Light level and part orientation are changed based upon how a reflectivity map of the part changes with each adjustment. New and acceptable data are now acquired for those areas of the part where data was previously discarded. This new, acceptable data is combined with the previously acceptable data to obtain a complete set of data upon which acceptability of the part is determined.

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Figures

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